

**BIDIRECTIONAL LATERAL
SUPERJUNCTION DEVICE WITH RESURF REGION**

ABSTRACT OF THE INVENTION

A lateral conduction superjunction device has bidirectional conduction characteristics. In a first embodiment, spaced vertical trenches in a P substrate are lined with N diffusions. A central MOSgate structure is disposed centrally in the parallel trenches and source and drain electrodes are at the opposite respective ends of the trenches. In a second embodiment, flat layers of alternately opposite conductivity types have source and drain regions at their opposite ends. A trench MOSgate is disposed between the source region at one end of the layers to enable bidirectional currant flow through the stocked layers.